

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
22 April 2004 (22.04.2004)

PCT

(10) International Publication Number
WO 2004/033740 A1

(51) International Patent Classification⁷: C22C 21/12

(74) Agents: SHIMIZU, Hisayoshi et al.; Idemitsu Nagahori Building, 4-26, Minamisemba 3-chome, Chuo-ku, Osaka-shi, Osaka 542-0081 (JP).

(21) International Application Number:

PCT/JP2003/012938

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(30) Priority Data:

2002-296268

9 October 2002 (09.10.2002) JP

60/483,635

1 July 2003 (01.07.2003) US

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (for all designated States except US): SHOWA DENKO K.K. [JP/JP]; 13-9, Shiba Daimon 1-chome, Minato-ku, Tokyo 105-8518 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): YOSHIOKA, Hiroki [JP/JP]; c/o Oyama Regional Office, SHOWA DENKO K.K., 480, Inuzuka 1-chome, Oyama-shi, Tochigi 323-0811 (JP). YAMANAKA, Masaki [JP/JP]; c/o Oyama Regional Office, SHOWA DENKO K.K., 480, Inuzuka 1-chome, Oyama-shi, Tochigi 323-0811 (JP). MATSUOKA, Hideaki [JP/JP]; B-101, 1010 Yamagoe, Nagakute-cho, Aichi-gun, Aichi 480-1111 (JP).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/033740 A1

(54) Title: ALUMINUM ALLOY FOR CUTTING PROCESSING, AND ALUMINUM ALLOY WORKED ARTICLE MADE OF THE SAME

(57) Abstract: An aluminum alloy for cutting processing consists essentially of Cu: 1 to 6.5 mass%, Zn: 0.05 to 1 mass%, Bi: 0.1 to 1 mass%, Sn: 0.1 to 1 mass%, B: 100 mass ppm or less, or further includes at least one element as a selective additional element selected from the group consisting of Fe: 0.05 to 1 mass%, Mg: 0.01 to 0.3 mass%, Si: 0.05 to 1 mass% and Ti: 0.01 to 0.5 mass%.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/ 12938

A. CLASSIFICATION OF SUBJECT MATTER

IntCl' C22C21/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IntCl' C22C21/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 Japanese Utility Model Gazette 1926-1996, Japanese Publication of Unexamined Utility Model Applications 1971-2004, Japanese Registered Utility Model Gazette 1994-2004, Japanese Gazette Containing the Utility Model 1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
EX	JP 2004-3007 A(FURUKAWA DENKI KOGYO K.K.) 2004.01.08, claim 1, [0001], [0008], example (Family:none)	1-12
EX	JP 2004-2947 A(K.K. KOBE SEIKOUSHO) 2004.01.08, claim 1, [0012], [0014], example (Family:none)	1-12
X	EP 982410 A1(Alusuisse Technology & Management AG), 2000.03.01(Family:none)	1-12
X	US 6113850 A(Bartges et al.)2000.09.05 (Family:none)	1-12
X	US 5803994 A(Coats,II et al.)1998.09.08 (Family:none)	1-12

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"E" earlier application or patent but published on or after the international filing date

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"O" document referring to an oral disclosure, use, exhibition or other means

"&" document member of the same patent family

"P" document published prior to the international filing date but later than the priority date claimed

Date of the actual completion of the international search

05.02.2004

Date of mailing of the international search report

17.2.2004

Name and mailing address of the ISA/JP

Japan Patent Office

3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan

Authorized officer

TAKESHI INOUE

4K 9269

Telephone No. +81-3-3581-1101 Ext. 3435

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/ 12938

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2001-107169 A (SHOWA ARUMINIUMU K.K.) 2001.04.17, claim 1-5 (Family: none)	1-12
X	JP 63-312945 A (K.K. KOBE SEIKOUSHO) 1988.12.21, claim 2, example (Family: none)	1-12